

Easily Scale to 100's of kWs per Server Cabinet

Up to 84% less space required in the White Space

High Efficiency

Safe HVDC Distribution, no shocks, no arc-flash, no fire

Digital Intelligence on Every Circuit

Installs 40%+ faster
than traditional electrical distribution

DATA CENTER BRIEF

VoltServer's Digital Electricity for Al Data Centers

Digital Power Delivery for the Next Generation of Computing

As artificial intelligence (AI) continues to reshape the digital frontier, data centers are experiencing unparalleled growth and transformation. The exponential increase in processing demands brought by AI workloads—deep learning, large language models, and real-time analytics—requires not only sophisticated computing infrastructure but also reliable, efficient, and safe power delivery systems.

VoltServer's Digital Electricity® technology emerges as a groundbreaking solution, tailor-made for the challenges and opportunities of modern Al data centers.

Understanding Digital Electricity

Traditional data centers have relied heavily on alternating current (AC) systems and, increasingly, on high-voltage direct current (HVDC) architectures for power distribution. While robust, these systems are not without their challenges in terms of safety, complexity, and scalability.

in the 2023 National Electrical Code

VoltServer's Digital Electricity introduces a fundamentally new approach: It transmits electricity as discrete, monitored energy packets over standard cabling infrastructure, continuously assessing for faults and instantly halting delivery if an unsafe condition arises.

This innovation draws from the principles of packetized energy transfer. Rather than delivering bulk current continuously, Digital Electricity breaks power into hundreds of pulses per second, analyzing each pulse for anomalies. The result is a power delivery method that combines the granularity and controllability of digital data transmission with the raw capability of high-power electrical systems.









Enhanced Safety

Al data centers can involve massive power densities and complex rack architectures. often with technicians working in close proximity to live circuits. Digital Electricity's unique ability to instantly detect and mitigate faults drastically reduces the risk of electrical fires, arc flashes, and accidental electrocution. Unlike traditional high-voltage systems that allow energies to reach unsafe levels before responding, VoltServer's Digital Electricity acts in under four milliseconds, offering unmatched protection for personnel and equipment.



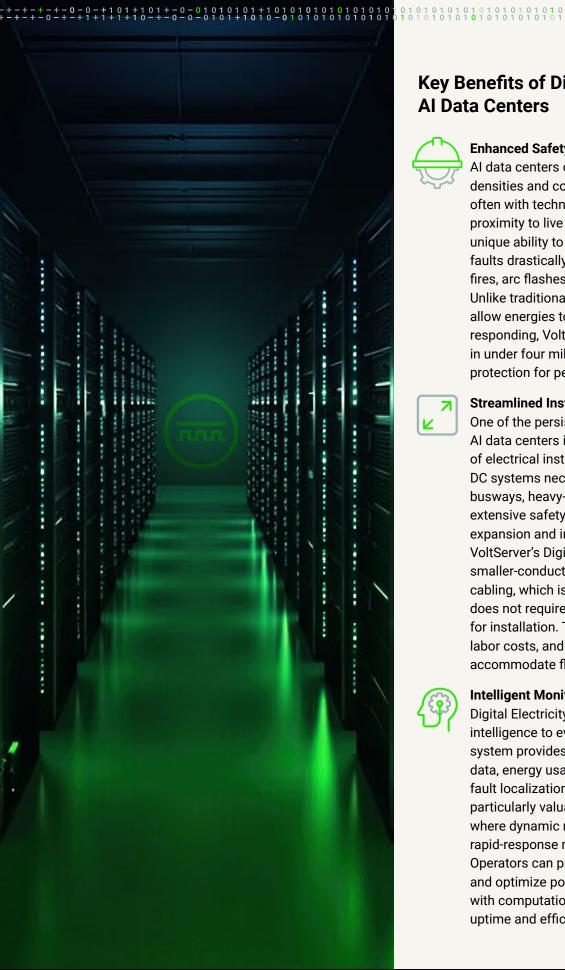
Streamlined Installation and Scalability

One of the persistent challenges in scaling Al data centers is the complexity and cost of electrical installation. High-voltage AC or DC systems necessitate specialized conduit, busways, heavy-gauge conductors, and extensive safety protocols, which can slow expansion and inflate capital expenditures. VoltServer's Digital Electricity operates over smaller-conductor, twisted-pair structured cabling, which is lighter, easier to handle, and does not require the same level of expertise for installation. This reduces build time, lowers labor costs, and allows for rapid scaling to accommodate fluctuating AI workloads.



Intelligent Monitoring and Control

Digital Electricity is inherently digital, bringing intelligence to every watt delivered. The system provides real-time performance data, energy usage analytics, and immediate fault localization. This level of visibility is particularly valuable for AI data centers, where dynamic resource allocation and rapid-response maintenance are essential. Operators can pinpoint issues, predict failures, and optimize power distribution in lockstep with computational demands to improve uptime and efficiency.







Space Optimization and Flexibility

Digital Electricity reduces the footprint of power distribution hardware within the data center. The use of lighter cabling and centralized power management means less physical infrastructure is required. This liberated space can be repurposed for additional AI processing hardware, increasing the computational density and return on investment per square foot. Furthermore, as AI data centers evolve, the modularity and flexibility of Digital Electricity makes it easier to reconfigure layouts or upgrade systems with minimal disruption.



Future-Proofing Infrastructure

With AI technologies advancing rapidly, data centers need power systems that can adapt and integrate with emerging standards. VoltServer's Digital Electricity is designed with interoperability in mind, allowing easy integration with renewable energy sources, battery storage, and next-generation Internet of Things (IoT) controls. As sustainability becomes a core requirement, Digital Electricity positions data centers to embrace green initiatives without sacrificing reliability or performance.

Digital Electricity vs. Traditional Power Systems

Traditional AC/DC Systems: Require extensive bulky hardware, highly skilled labor, and ongoing safety oversight. They may also be slower to respond to faults and less adaptable to fast-changing load profiles.

VoltServer's Digital Electricity: Offers digital intelligence, rapid deployment, and built-in safety, making it ideal for the dynamic, high-density environments common to Al data centers.

Powering the Al Revolution

Al data centers are at the heart of technological progress, fueling innovation across every industry. The infrastructure powering these centers must rise to meet new challenges: scalability, safety, efficiency, and sustainability. VoltServer's Digital Electricity stands at the intersection of these demands, delivering a future-proof, digital-first power system that is safer, smarter, and more agile than legacy approaches.



100kW DIGITAL **ELECTRICITY Kit for Al Data Centers**

FMP Transmitters Gray Space



(8) 8-Pair Pre-Terminated FMP Cable Assemblies





(2) 67.7kW (50kW N+1) FMP to HVDC PDU with (4) 16.7kW Modules



Release Date Q4 2026

Air Cooled PSU and Liquid Cooled GPU

Total Power Cable Area

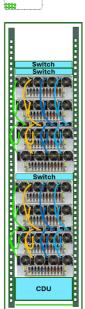
- + 12"W x 6"H Cable Tray
- + Cables to Rack (8)
- + 8 Pairs, 14 AWG, 0.780" OD

Rack Space (RU)

- + Servers
- + PDUs
- + CDUs 4
- + Switches 3
- 41 Total

Cooling

| | Air | Liquid |
|------|-----|--------|
| GPUs | | Х |
| PSUs | Х | |



Server 12.5kW

Server 12.5kW

FMP/HVDC PDU 67.7W/ 50KW N+1

Server 12.5kW

Server 12.5kW

Server 12.5W

Server 12.5W

FMP/HVDC PDU 67.7W/ 50kW N+1

Server 12.5 kW

Server 12.5 kW

Liquid Cooled PSU and GPU

Total Power Cable Area

- + 12"W x 6"H Cable Tray
- + Cables to Rack (16)
- + 8 Pairs, 14 AWG, 0.780" OD

4

Rack Space (RU)

- + Servers
- + PDUs
- + CDUs
- 4 3 + Switches
- **Total** 43

Cooling

| | Air | Liquid |
|------|-----|--------|
| GPUs | | Х |
| PSUs | | х |



Server 25kW

Server 25kW

FMP/HVDC PDU 67.7kW/ 50kW N+1

Server 25kW

Server 25kW

FMP/HVDC PDU 67.7kW/ 50kW N+1

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FMP/HVDC PDU 67.7kW/ 50kW N+1

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